



## Second Five-Year Review Report

for

### Motor Wheel Disposal Site

Lansing, Ingham County, Michigan

CERCLIS ID # MID980702989; Site SPILL # 05S5

July 2007

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## **List of Acronyms**

<b>ARAR</b>	Applicable or Relevant and Appropriate Requirement
<b>BWL</b>	Board of Water and Light (City of Lansing )
<b>CD</b>	Consent Decree
<b>CERCLA</b>	Comprehensive Environmental Response Compensation and Liability Act
<b>CFR</b>	Code of Federal Regulations
<b>CIC</b>	Community Involvement Coordinator
<b>EPA</b>	United States Environmental Protection Agency, Region 5
<b>ESD</b>	Explanation of Significant Difference
<b>FYR</b>	Five-Year Review
<b>IC</b>	Institutional Control
<b>MCL</b>	Maximum Contaminant Level
<b>MDEQ</b>	Michigan Department of Environmental Quality
<b>MDNR</b>	Michigan Department of Natural Resources (precursor agency to MDEQ)
<b>MW</b>	Monitoring Well
<b>MWDS</b>	Motor Wheel Disposal Site
<b>NCP</b>	National Oil and Hazardous Substances Pollution Contingency Plan
<b>NPL</b>	National Priorities List
<b>O&amp;M</b>	Operation and Maintenance
<b>PCOR</b>	Preliminary Close-Out Report
<b>PRP</b>	Potentially Responsible Party
<b>RA</b>	Remedial Action

<b>RAO</b>	Remedial Action Objective
<b>RD</b>	Remedial Design
<b>RI/FS</b>	Remedial Investigation/Feasibility Study
<b>ROD</b>	Record of Decision
<b>RPM</b>	Remedial Project Manager
<b>SDWA</b>	Safe Drinking Water Act
<b>SEW</b>	Saginaw Extraction Well
<b>UU/UE</b>	Unlimited Use or Unrestricted Exposure
<b>VOC</b>	Volatile Organic Compound

## **Executive Summary**

The Motor Wheel Disposal Site (MWDS or Site) is an approximately 24-acre parcel located on the northeast edge of the City of Lansing within the NE ¼, SW ¼, Section 3 of Lansing Township (T4N, R2W), Ingham County, Michigan.

The 24-acre parcel (hereafter referred to as the waste disposal area) is fenced and capped with a semi-permeable landfill cover. The groundwater contamination and the infrastructure for the groundwater extraction system of the remedy, however, extend approximately 1.5 miles south of the waste disposal area. The groundwater extraction and treatment portion of the remedy comprises monitoring points, extraction wells, and a groundwater collection and transfer system to deliver water to a treatment facility located within the waste disposal area.

Completion of remedy construction was documented with the signing of the Preliminary Close-out Report (PCOR) on December 18, 1997.

The remedy is currently protective of human health and the environment in the short-term. The landfill cover and access controls are functioning as designed, and have achieved their remedial objectives, which include minimizing the migration of contaminants to groundwater and surface water, and preventing direct contact with contaminants at the Site. The groundwater extraction and treatment system continues to remove contaminants of concern, and there is currently no exposure to contaminated groundwater.

Long-term protectiveness of the remedy is dependent upon the continued effectiveness of the groundwater extraction and treatment system in maintaining hydraulic control of the plume and removing contaminants from the affected aquifers. Groundwater monitoring will continue until the completed performance of the remedy can be demonstrated by the attainment of remedial standards. Long term protectiveness is also dependent upon the implementation and maintenance of the institutional controls listed in the Consent Decree, which will be subject to an institutional controls study and plan within six months of the signing of this Five-Year Review.

## Five-Year Review Summary Form

Site IDENTIFICATION		
Site name (from WasteLAN): Motor Wheel, Inc.		
EPA ID (from WasteLAN): CERCLIS ID# MID980702989; Site SPILL # 05S5		
Region: 5	State: MI	City/County: Lansing, Ingham County
Site STATUS		
NPL status: <input checked="" type="checkbox"/> Final <input type="checkbox"/> Deleted <input type="checkbox"/> Other (specify)		
Remediation status (choose all that apply): <input type="checkbox"/> Under Construction <input checked="" type="checkbox"/> Operating <input type="checkbox"/> Complete		
Multiple OUs?* <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		Construction completion date: 12/18 /1997
Has Site been put into reuse? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		
REVIEW STATUS		
Lead agency: <input checked="" type="checkbox"/> EPA <input type="checkbox"/> State <input type="checkbox"/> Tribe <input type="checkbox"/> Other Federal Agency		
Author name: William J. Ryan		
Author title: Remedial Project Manager		Author affiliation: U.S. EPA Region 5, SFD
Review period: 09/28/2006 to 07/2007		
Date(s) of Site inspection: 11/13/2006 - 11/15/2006		
<b>Type of review:</b> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <span><input checked="" type="checkbox"/> Post-SARA</span> <span><input type="checkbox"/> Pre-SARA</span> <span><input type="checkbox"/> NPL-Removal only</span> </div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <span><input type="checkbox"/> Non-NPL Remedial Action Site</span> <span><input type="checkbox"/> NPL State/Tribe-lead</span> </div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <span><input type="checkbox"/> Regional Discretion</span> </div>		
Review number: <input type="checkbox"/> 1 (first) <input checked="" type="checkbox"/> 2 (second) <input type="checkbox"/> 3 (third) <input type="checkbox"/> Other (specify)		
<b>Triggering action:</b> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <span><input type="checkbox"/> Actual RA On-site Construction at OU #_____</span> <span><input type="checkbox"/> Actual RA Start at OU#_____</span> </div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <span><input type="checkbox"/> Construction Completion</span> <span><input checked="" type="checkbox"/> Previous Five-Year Review Report</span> </div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <span><input type="checkbox"/> Other (specify)</span> </div>		
Triggering action date (from WasteLAN): 07/22/2002		
Due date (five years after triggering action date): 07/22/2007		

\* ["OU" refers to operable unit.]

\*\* [Review period should correspond to the actual start and end dates of the Five-Year Review in WasteLAN.]

## Five-Year Review Summary Form (Continued)

### Issues:

- Institutional Controls – A Declaration of Restrictions has been filed with the county; however, its effectiveness is uncertain and requires review
- Institutional Controls/Long-term Stewardship - Long-term stewardship must be ensured by maintaining and monitoring ICs' effectiveness
- Ensuring contaminant capture - Uncertainty remains regarding the extent of site-wide contaminant capture
- Vinyl Chloride - There is vinyl chloride in the glacial aquifer beyond the influence of the Zone 2 wells that could potentially migrate into the Saginaw Aquifer
- Hydraulic zone of influence for SEW-5 - The zone of influence for SEW-5 has yet to be completely determined
- Performance criteria for extraction wells - The performance of extraction wells periodically deteriorates beyond the point at which they would benefit from a work-over
- MW-87 - The lower two hydraulic units monitored by MW-87 were rendered inaccessible when the drop-pipe supporting the packer system corroded and dropped to the bottom of the well

### Recommendations and Follow-up Actions:

- Institutional Controls - An IC study will be conducted within six months of the signing of this Five-Year Review Report
- Institutional Controls/Long-term Stewardship - An IC Plan will be developed for long-term stewardship
- Ensuring contaminant capture - Continue monitoring the ammonia and VOC plumes until capture can be demonstrated
- Vinyl Chloride - Develop a strategy for protecting the Saginaw Aquifer that either includes additional extraction wells in the glacial aquifer or provides an equivalent level of protection

- Hydraulic zone of influence for SEW-5 Collect and provide U.S. EPA/MDEQ with the appropriate hydraulic data necessary to determine the extent to which SEW-5 can reliably provide contaminant capture
- Performance criteria for extraction wells Develop performance criteria for extraction wells that can be used to determine when restoration procedures should be implemented, so a work-over can be scheduled before well performance drops below acceptable levels
- MW-87 Return MW-87 to a condition that allows installation of the FLUTe multi-port sampling system (made specifically for this well) or replace with a new monitoring well that allows sampling of the lower two hydraulic units

**Protectiveness Statement:**

The remedy is currently protective of human health and the environment in the short term. The landfill cover and access controls are functioning as designed, and have achieved their remedial objectives, which include minimizing the migration of contaminants to groundwater and surface water, and preventing direct contact with contaminants at the Site. The groundwater extraction and treatment system continues to remove contaminants of concern, and there is currently no exposure to contaminated groundwater.

Long-term protectiveness of the remedy is dependent upon the continued effectiveness of the groundwater extraction and treatment system in maintaining hydraulic control of the plume and removing contaminants from the affected aquifers. Groundwater monitoring will continue until the completed performance of the remedy can be demonstrated by the attainment of remedial standards. Long term protectiveness is also dependent upon the implementation and maintenance of the institutional controls listed in the Consent Decree, which will be subject to an institutional controls study and plan within six months of the signing of this Five-Year Review.

**Other Comments:**

None

# Five-Year Review Report

## I. INTRODUCTION

The purpose of Five-Year Reviews is to determine whether the remedy at a Site is protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in Five-Year Review reports. In addition, Five-Year Review reports identify issues found during the review, if any, and recommendations to address them.

The Agency prepared this Five-Year Review pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) §121 and the NCP. CERCLA §121 states:

*If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the Site, the President shall review such remedial action no less often than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented. In addition, if upon such review it is the judgment of the President that action is appropriate at such Site in accordance with section [104] or [106], the President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of all such reviews, and any actions taken as a result of such reviews.*

The Agency interpreted this requirement further in the NCP. 40 CFR §300.430(f)(4)(ii) states:

*If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the Site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action.*

The U.S. EPA Region 5 has conducted this statutory Five-Year Review of the remedial actions implemented at the Site. The review was conducted between September 2006 and July 2007. This report documents the results of the review.

This is the second Five-Year Review for this Site. The triggering action for this review was the signing of the first Five-Year Review, as shown in the U.S. EPA's WasteLAN database: July 22, 2002. This review is required since hazardous substances, pollutants, or contaminants have been left on Site above levels that allow for unlimited use and unrestricted exposure.

## II. SITE CHRONOLOGY

**Table 1 - Chronology of Events**

Event	Date
Property used by Motor Wheel Inc. for industrial waste disposal	1938 to 1971
Motor Wheel Inc. was a wholly owned subsidiary of Goodyear Tire & Rubber Company	1964 to 1986
Three cleanup actions initiated resulting in excavation and off-site disposal of waste material including solid waste, paint sludge, and oil	1970 to 1972
Contaminated soils exposed while stripping overburden from sand and gravel deposits. Exposed materials excavated, stockpiled, and covered with clay	1978 - 1980
Proposed National Priorities Listing (NPL)	October 15, 1984
Final NPL Listing	June 10, 1986
Commercial operations at Site were discontinued	1987
Motor Wheel, Inc., W.R. Grace, and Goodyear Tire & Rubber sign an Administrative Order on Consent to conduct a Remedial Investigation/Feasibility Study (RI/FS)	August 7, 1987
RI/FS Completed	September 30, 1991
Removal Assessments	February 7, 1990 March 3, 1991 February 11, 1993
ROD Signature	September 30, 1991
ESD (Explanation of Significant Difference)	July 12, 2001
Consent Decree signed for RD/RA	April 22, 1994
Remedial Design (RD) Start	May 16, 1992
RD Complete	June 26, 1997
RA Start	June 27, 1997
Preliminary Close-out Report (Construction Completion Date)	December 18, 1997
Investigation of the Saginaw Aquifer at the Motor Wheel Disposal Site	Submitted March 13, 1998
1 <sup>st</sup> SDWA 1431 Order to W.R. Grace	February 26, 1999
2 <sup>nd</sup> SDWA 1431 Order	July 29, 1999
W.R. Grace files 1 <sup>st</sup> petition for review of SDWA 1431 Order with U.S. Court of Appeals, 3 <sup>rd</sup> Circuit	September 1, 1999

**Table 1 - Chronology of Events**

Event	Date
W.R. Grace files 2 <sup>nd</sup> petition for review of SDWA 1431 Order with U.S. Court of Appeals, 3 <sup>rd</sup> Circuit	March 29, 2000
Final Risk Assessment for the Saginaw Aquifer	June 22, 2000
Partial NPL Deletion (3.45 acres only)	August 21, 2000
Buy-out agreement between Goodyear and W.R. Grace	September 2000
W.R. Grace SDWA 1431 Order appeals consolidated and argued in U.S. Court of Appeals, 3 <sup>rd</sup> Circuit	September 27, 2000
U.S. Court of Appeals vacates SDWA 1431 Orders	August 10, 2001
1994 Consent Decree for RD/RA amended to include the Saginaw Aquifer	December 13, 2002
First Five-Year Review	July 22, 2002

### **III. BACKGROUND**

**Physical Characteristics** - The Motor Wheel Disposal Site (MWDS or Site) is a 24-acre parcel located at 1401 Lake Lansing Road, on the northeast edge of the City of Lansing, within the NE ¼, SW ¼, Section 3 of Lansing Township (T.4N., R.2W.), Ingham County, Michigan. The Site is bordered by: (1) abandoned Penn Central Railroad tracks to the west and north; (2) the former W.R. Grace & Co. plant property (Michigan Fertilizer Company) to the south; (3) the City of Lansing/Lansing Township boundary to the east; (4) the Granger/North Lansing Sanitary Landfill to the northeast; (5) the Paulson Street Landfill to the north (the Francis property is just south of this landfill); (6) the Daggett Landfill to the north of the Paulson Street Landfill; (7) the Friedland Iron and Metal Company due west; and (8) the Lansing Board of Water and Light (BWL) North Lansing Fill No. 2 to the southeast. There is also an abandoned gravel pit owned by MSV on the north side of the MWDS landfill. A map of the site and adjacent properties is provided in Attachment 1.

The MWDS lies in level to gently rolling topography resulting from depositional processes associated with the continental glaciers that covered Michigan during the Pleistocene Epoch. Aquifers in the glacial deposits are fed by precipitation and serve an important role in recharging the deeper aquifers. The glacial deposits in this area were laid down upon bedrock sediments of the Saginaw Formation. The Saginaw Formation comprises a bedrock aquifer that has been intensively exploited in the region, and is the principal source of water for the City of Lansing. The Saginaw Aquifer is recharged in places where it is directly overlain by the glacial aquifer.

**Land and Resource Use** - The surrounding area is a mixture of residential and commercial property. Although there have been a number of zoning changes over the years, it is anticipated that a similar mix of land uses will continue around the waste disposal area. MSV Associates purchased the land in 1978 and operated a sand and gravel mine in the northeast portion of the

property until approximately 1987. In establishing cleanup requirements for the Site, U.S. EPA did not consider the possibility of residential development within the boundaries of the waste disposal area. The waste disposal area is currently fenced and the contaminated soils are contained under a semi-permeable cap.

**History of Contamination** - The property was used by the Motor Wheel Corporation for the disposal of industrial waste from approximately 1938 until 1971. The disposal included solid and liquid industrial waste, paints, solvents, acids, caustics, sludge, and other materials. Waste materials were deposited on the property in tanks, barrels, seepage ponds, and open fill areas. An estimated 210,000 cubic yards of waste material is in place at the Site. Between 1964 and 1986 Motor Wheel Corporation was a wholly owned subsidiary of the Goodyear Tire & Rubber Company. The Goodyear Tire & Rubber Company is a respondent to the Motor Wheel Consent Order because of this ownership.

MSV Associates purchased the property in 1978 and mined sand and gravel in the northeast section until approximately 1987. Industrial waste and degraded soil was exposed while stripping overburden from sand and gravel deposits. The exposed material was excavated, stockpiled in the western part of the site, and covered with clay.

In December 1982, three 10,000 gallon tanks and degraded fill material were discovered. Subsequently, the three tanks, approximately 800 cubic yards of contaminated soil, and approximately 350 cubic yards of fill containing an unknown number of drums were excavated and disposed of off-site. All operations at the site were discontinued in 1987.

**Initial Response** - In 1970 the Michigan Department of Natural Resources (MDNR) requested that the Motor Wheel Corporation remove all solid waste, paint sludge, and oil from seepage ponds for disposal off-site. Between 1970 and 1982, at least three cleanup actions to excavate contaminated waste were initiated. Some of the excavated waste was disposed of off-site and the former pond areas were backfilled.

The site was placed on the National Priorities List (NPL) on June 10, 1986 (50 FR 41015). On August 7, 1987 Motor Wheel Corporation, W.R. Grace & Co., and Goodyear Tire & Rubber Company signed an Administrative Order on Consent agreeing to conduct a Remedial Investigation (RI) and Feasibility Study (FS) at the Motor Wheel site.

The RI/FS was conducted between August 1987 and September 1991. The RI Report identified three hydrostratigraphic units associated with the MWDS: 1) a shallow perched zone in glacial deposits underlying the waste disposal area, 2) a glacial aquifer in sands and gravels of the Mason Esker, and 3) the Saginaw Aquifer underlying the glacial deposits.

The waste mass in the disposal area was the source of groundwater contamination in the perched zone and glacial aquifer. Contaminated water within the shallow perched zone appears contained within the waste disposal area. The glacial aquifer, however, has been affected beyond the boundaries of the waste disposal area by contaminants seeping from the perched zone above it.

Aqueous phase Volatile Organic Compounds (VOCs) have migrated from the waste disposal area to the south-southwest in the glacial aquifer.

**Basis for Taking Action** - Hazardous substances have been released at the site in various media. Exposures to soil, groundwater, and sediment are associated with significant human health risks, due to exceedances of U.S. EPA's risk management criteria for either the average or the reasonable maximum exposure scenarios.

**Table 2 - Hazardous substances released at the MWDS by medium**

<u>Glacial Aquifer Groundwater</u>	<u>Perched Zone Groundwater</u>	<u>Sediments and Surface Water</u>	<u>Soil</u>
1,1-dichloroethene 1,2-dichloroethane 1,2-dichloroethene 2-hexanone Benzene Bis(2-ethylhexyl)- phthalate Bromoethane Chloroethene Chloroform Methylene Chloride Nitrate Sulfate Tetrachloroethene Trichloroethene Vinyl Chloride	1,1-dichloroethene 1,2-dichloroethane 1,2-dichloroethene 2-butanone 2-methyl naphthalene 2,4,6- trichlorophenol 4-methyl-2-pentanone Benzene Bis(2-ethylhexyl) phthalate Chloromethane Di-n-octylphthalate Ethylbenzene Fluoranthene Methylene Chloride Naphthalene Nitrate Pyrene Sulfate Tetrachloroethene Toluene Trichloroethene Vinyl Chloride Xylenes	1,2-dichloroethene Benzene Bis(2-ethylhexyl)- phthalate Chloride Fluoride Nitrate Sulfate Trichloroethene Vinyl Chloride	1,2-Dichloroethane 4,4-DDT Arsenic Bis(2-ethylhexyl)- phthalate Dieldrin Ethylbenzene Heptachlor PAHs Toluene Trichloroethylene Xylene Zinc

#### **IV. REMEDIAL ACTIONS**

**Remedy Selection** - A ROD for the site was signed September 30, 1991. The selected remedy requires capping the disposal area with an Act 641 cap, and extracting and treating the perched zone and the glacial aquifer groundwater.

The purpose of the cap in this remedy is to control infiltration in the waste disposal area and reduce risk of exposure to the waste. The goal of the ground water extraction and treatment component of this remedial action is to restore ground water to its beneficial use, which, at this site, is defined as residential use.

The following components of the ROD have been established with U.S. EPA approved designs:

- Installation of an 11 acre Michigan Act 64 cap over the waste disposal area
- Back-filling to cover exposed fill areas and to establish an acceptable slope in the excavated area for extension of the cap
- Extraction and treatment of contaminated ground water from the perched zone and the glacial aquifer
- Site use restrictions to limit land-use and prevent the withdrawal of contaminated groundwater
- Groundwater monitoring to assess the status of the remedy

**Remedy Implementation** - In a Consent Decree signed April 22, 1994 the respondents agreed to perform the Remedial Design/Remedial Action (RD/RA). The RD was conducted in conformance with the 1991 ROD. Implementation of the RA began June 27, 1997, and construction was completed December 18, 1997.

Because there was no chemical evidence to suggest that the Saginaw Aquifer was affected when the ROD was signed, it was thought that the Saginaw Formation was hydraulically isolated from the glacial aquifer by a locally continuous shale layer. Subsequent investigations, however, demonstrated that the Saginaw Formation is locally recharged by the glacial aquifer, and has been impacted by site-related contaminants.

The investigations confirming that the glacial aquifer is hydraulically connected to the Saginaw Aquifer prompted the involvement of U.S. EPA's Safe Drinking Water program, because the Saginaw Aquifer is the sole source of drinking water for the City of Lansing. The Safe Drinking Water Program filed petitions with the U.S. District Court under the authority of Section 1431 of the Safe Drinking Water Act. These petitions were subsequently vacated by the U.S. Court of Appeals, but they triggered an Explanation of Significant Differences (ESD) to the remedy outlined in the ROD and an Amended Consent Decree (CD), which expanded the remedy to include the Saginaw Formation.

On July 12, 2001, an ESD was signed that addressed: (1) the extension of the operable unit as defined in the 1991 ROD to include the Saginaw Aquifer; and (2) the modification of the remedial standards for vinyl chloride and fluoride to the MCL (Maximum Contaminant Level).

On December 13, 2002 an Amended Consent Decree was signed with an Amended Statement of Work (A-SOW) attached that included the following provisions:

The A-SOW requires the respondents:

- To delineate, through existing data sources and/or new monitoring wells, the nature, rate of movement, and extent of the MWDS contamination plume within the Saginaw Aquifer

- To design an appropriate remedial action that is consistent and compatible with the on-going Superfund remedial action to capture, treat and/or remove the threat posed by the entire MWDS contaminant plume within the Saginaw Aquifer
- To implement the U.S. EPA approved remedial design and to integrate the remedial action into the on-going remedial action
- Ensure that the BWL Dye Water Conditioning Plant (WCP) production wells are protected from any adverse effects of the ammonia contamination in the Saginaw Aquifer attributable to the MWDS

To briefly summarize the implementation of the remedy to date, the waste disposal area has been capped and fenced, a Declaration of Restrictions was recorded with the county, a treatment facility built near the waste disposal area, and extraction wells installed in the perched zone and glacial aquifer. The groundwater extraction system for the glacial aquifer comprises three zones extending approximately two miles south of the waste disposal area. Each zone in the glacial aquifer contains two extraction wells, all connected to the treatment facility by a system of underground pipes.

In addition to the remediation of the perched and glacial aquifers, the implementation of the A-SOW has added five extraction wells and a suite of monitoring wells to the Saginaw Aquifer. The primary contaminants of concern currently being monitored at the MWDS are ammonia and vinyl chloride.

**Institutional Controls** - Institutional controls (ICs) are required to ensure the protectiveness of the remedy. ICs are non-engineered instruments, such as administrative and legal controls, that help to minimize the potential exposure to contamination and protect the integrity of the remedy. ICs are required to ensure long-term protectiveness for any areas that do not allow unlimited use or unrestricted exposure (UU/UE).

MSV Associates recorded an IC in the form of a Declaration of Restrictions with the Ingham County Register of Deeds on July 12, 2006; a copy of the Declaration is provided as Attachment 2. Nevertheless, the Declaration's effectiveness is uncertain, and will be reviewed to ensure long-term protectiveness.

U.S. EPA will create an IC Plan that includes steps necessary to ensure effective ICs are implemented and maintained. As part of the plan, U.S. EPA will request that the PRPs undertake an IC Study to ensure that effective ICs have been implemented. The IC Study will be completed for the Site within six months after the release of this Five-Year Review Report. Among other things, the IC Study will examine whether the Declaration of Restrictions actually operates to restrict current and future Site use as intended, whether the Declaration is currently effective and valid and has not been lifted or superseded, and whether the Declaration creates rights that can be enforced by U.S. EPA or MDEQ in the event any of its stated prohibitions are violated.

Also, U.S. EPA will request assurances for long-term stewardship including regular inspections of the Site and an annual certification to U.S. EPA that ICs are effective and that IC maps are

completed. The IC maps will be made available to the public on U.S. EPA's Superfund Data Management System (SDMS).

Finally, U.S. EPA understands that two pending developments may enhance the Agencies' and responsible parties' ability to restrict exposure and ensure protectiveness with ICs. First, the City of Lansing may promulgate an ordinance that prohibits, with limited exceptions, the drilling of wells within the City limits. Because such a prohibition would contribute to the remedy's long-term effectiveness for any off-Site areas to which groundwater contamination may migrate, the IC Study should examine the proposed ordinance's status. Second, the Michigan State Legislature is considering enacting a version of the Uniform Environmental Covenants Act (UECA). If the UECA is enacted during the IC Study's pendency, the Declaration will be reviewed to ensure consistency with its provisions.

**Table 3 - Institutional Controls Summary**

<b>Media, Engineered Controls, and Areas that Do Not Support UU/UE Based on Current Conditions.</b>	<b>IC Objective</b>	<b>Title of Institutional Control Instrument Implemented (note if planned)</b>
Waste Disposal Area was capped	<ul style="list-style-type: none"> <li>• Prohibit residential use</li> <li>• Prohibit groundwater use</li> <li>• Protect the integrity of the remedy</li> </ul>	Declaration of Restrictions filed with Ingham County Register of Deeds on July 12, 2006. IC Study planned to review effectiveness and consistency with current state law
<i>Groundwater - Saginaw Aquifer and glacial aquifer - current area that exceeds groundwater cleanup standards.</i>	Prohibit groundwater use until cleanup standards are achieved	City of Lansing ordinance now in committee that would restrict the drilling of wells throughout the city except in specific circumstances. IC Study planned to monitor progress
Fence around the waste disposal area	Protect the integrity of the remedy	NA

A map that depicts the current conditions of the Site and areas that do not allow UU/UE will be developed as part of the implementation of the IC study mentioned below.

The Declaration of Restrictions that was filed with the Ingham County Register of Deeds is provided in Attachment 2.

An aerial photograph showing the area currently subject to the Declaration of Restrictions is provided in Attachment 5.

**System Operations/Operation and Maintenance (O&M)** - The MWDS PRP Group and their consultants are conducting long-term monitoring and maintenance activities as required by the ROD, ESD and enforcement documents. The primary objectives associated with O&M include the following:

- Maintain physical security, cap integrity, and treatment plant effectiveness
- Maintain hydraulic and chemical control of the contaminant plumes
- Assess the performance of the groundwater extraction systems
- Monitor the progress of the groundwater remediation

Quarterly reports are submitted to document significant activities, plume evaluation, mass removal, and plans for the next quarter.

**Table 4 - Annual System Operations/O&M Costs**

Dates		Total Cost (\$K)(a)	Comments
From:	To:		
1/1/04	12/31/04	800	
1/1/05	12/31/05	810	
1/1/06	12/31/06	855	Increased expenditures due to addition of SEW-5 acceleration well
1/1/07	12/31/07	860 (estimated)	

(a) Costs include ongoing operations and maintenance costs only. Expenditures for site capital improvements, agency oversight, legal fees, etc, are not included.

Long term protectiveness at the site requires compliance with land use restrictions. Long term stewardship and monitoring are necessary to assure compliance with the land use restrictions. The IC plan will include activities to determine whether the O&M Plan needs to be updated to assure that ICs are adequately monitored and maintained.

## **V. PROGRESS SINCE LAST FIVE-YEAR REVIEW**

**Protectiveness statements from the last review:** *The remedy is protective in the short-term. Specifically, the waste mass remedy (landfill cap, site fencing, etc.) appears to be functioning as intended, and exposure pathways that could result in unacceptable risks are being controlled. All threats at the Site have been addressed through capping of contaminated soils and the installation of fencing and warning signs.*

*However, current groundwater monitoring data indicate that the remedy is not functioning as required to achieve groundwater cleanup goals. Based on the existing groundwater models developed by Waterloo Hydrogeologic, and other data, it is believed by Goodyear and its consultant that the installation of the two additional Saginaw Aquifer Extraction Wells (SEW-3*

& SEW-4) will accomplish the remedial objectives of containment of the MWDS Saginaw Aquifer contamination plume, reduction in contamination mass in the plume, and protection of the BWL production wells. The groundwater remediation system will continue to extract and treat groundwater from the perched zone, glacial and Saginaw Aquifers until the cleanup standards are met.

The U.S. EPA in consultation with the MDEQ, will verify long-term protectiveness of the remedial action through the Long-Term Monitoring Plan and an evaluation of potential migration of the contaminant plume downgradient from the treatment area.

**Issues and recommendations for follow-up actions from last review:**

**Table 5 - Actions Taken Since the Last Five-Year Review**

<b>Issues from Previous Review</b>	<b>Recommendations and Follow-up Actions</b>	<b>Party Responsible</b>	<b>Milestone Date</b>	<b>Action Taken and Outcome</b>	<b>Date of Action</b>
Amended Statement of Work	Review and approve	U.S. EPA/MDEQ	8/02	Approved	8/02
Monitoring well completion methodology	Evaluate packer system used in multi-port wells	PRPs	NA	Packers are being phased out and replaced by FLUTE multi-port systems	NA
Saginaw Aquifer cleanup (A)	Review design of discharge piping for SEW-3 & SEW-4	U.S. EPA/MDEQ	NA	Reviewed and approved	NA
Saginaw Aquifer cleanup (B)	Accelerate the installation of SEW-3 & SEW-4	PRPs	2003	Installed and operational	2003
Saginaw Aquifer cleanup (C)	Refine the characterization of the NE section of the plume	PRPs	8/02	Ongoing	NA
Additional Saginaw Aquifer characterization	Evaluate groundwater data from eight additional monitoring wells	PRPs	2003 - 2004	Evaluations from MW-87 through MW-94 completed	2004
Glacial aquifer concerns	Continue to evaluate monitoring data	U.S. EPA/MDEQ	NA	Ongoing	NA
Monitoring data adequacy for plume verification (A)	Quarterly sampling	PRPs	7/02	Implemented	8/02
Monitoring data adequacy for plume verification (B)	Obtain monitoring access to BWL wells 25-14, 25-18, 25-20 & 25-26	PRPs	7/02	Access granted by BWL	8/02

<b>Issues from Previous Review</b>	<b>Recommendations and Follow-up Actions</b>	<b>Party Responsible</b>	<b>Milestone Date</b>	<b>Action Taken and Outcome</b>	<b>Date of Action</b>
Monitoring data adequacy for plume verification (C)	Review sampling protocol	PRPs	7/02	Completed	8/02
Monitoring data adequacy for plume verification (D)	Review well venting issues	PRPs	8/02	Well venting issues are addressed in the revised Long-Term Groundwater Monitoring Plan	NA
Team communication (A)	Hold bi-weekly U.S. U.S. EPA/MDEQ conference calls	All	7/02	Done-eventually changed to as needed	7/02
Team communication (B)	Hold quarterly team meetings	All	9/02	Implemented and ongoing	9/02
Team communication (C)	Host a meeting of the groundwater modelers for MWDS	All	8/15/02	Meeting held August 14, 2002	8/14/02
Team communication (D)	Send a complete copy of Consent Decree to MDEQ	All	ASAP	CD sent to MDEQ	9/02

In addition to the installation of Saginaw Extraction Wells (SEW) 3 and 4 recommended in the 2002 Five-Year Review, the MWDS PRP Group has installed another extraction well (SEW-5) in the Saginaw Aquifer to improve contaminant capture and accelerate removal of vinyl chloride and ammonia. The effectiveness of SEW-5 is currently being evaluated.

## **VI. FIVE-YEAR REVIEW PROCESS**

**Administrative Components** - The Goodyear Tire & Rubber Company and its consultants were notified of the Five-Year Review start on May 14, 2006. The Motor Wheel Five-Year Review team was led by William J. Ryan, Remedial Project Manager (RPM) for the Site, and included Robert L. Franks and Charles Graff of the MDEQ Environmental Response Division, Superfund Section as representatives of the support agency.

The MWDS Five-Year Review schedule included the following components:

- Community Notification
- Document Review
- Data Review
- Site Inspection

- Five-Year Review Report Development and Review

**Community Involvement** - Activities to involve the community in the Five-Year Review process were initiated in October 2006 by Robert Paulson, the Community Involvement Coordinator (CIC) for the Motor Wheel Site. A notice was published in the Lansing State Journal in December 2006. No one in the community voiced any interest or concern regarding the Five-Year Review process subsequent to the publication of the notice. A copy of the Public Notice Ad is included as Attachment 4.

A second notice will be sent to the same local newspaper when the Five-Year Review for the Site is complete. The Five-Year Review will be available to the public at the Lansing Public Library, 401 S. Capitol Ave., Reference Section, 2<sup>nd</sup> Floor, Lansing, Michigan 48933.

**Document Review** - This Five-Year Review included a review of the following documents (See Appendix 6 for a complete list):

- Enforcement documents (Consent Decrees and Statements of Work)
- Design documents (RI/FS Reports)
- Decision documents (ROD and ESD)
- O&M records and quarterly monitoring data

**Data Review** - The MWDS PRP Group has monitored groundwater for the MWDS remedy since construction completion in 1997. Since start-up, the extraction and treatment system has processed over three billion gallons of groundwater. As of March 2007, approximately 540 pounds of vinyl chloride and 416,000 pounds of ammonia have been removed from the glacial and Saginaw Aquifers. This mass removal represents approximately 95% of the estimated original vinyl chloride and 64% of the estimated original ammonia affecting both aquifers.

A review of Zone 1 operations in the glacial aquifer reveals that prior to 2004 vinyl chloride and ammonia levels were not significantly decreasing over time in central areas of the plume. In January 2004 extraction rates in the Zone 1 wells were increased, and in June 2004 piping to the treatment plant was upsized. Subsequently, increased extraction rates appear to have resulted in decreasing trends in vinyl chloride concentrations in select wells monitoring Zone 1.

Select wells in Zone 2 show decreasing concentrations of vinyl chloride and ammonia, however, MW-41 has shown a steady increase in the concentration of vinyl chloride since system startup. This well is approximately 2500 ft downgradient of the Zone 2 extraction wells. The vinyl chloride in Zone 2 has recently been raised as an issue with the MWDS PRP Group, because a significant mass is present downgradient of the Zone 2 extraction wells, and is beyond their influence. This mass of vinyl chloride is also too far upgradient of Zone 3 to be captured by these extraction wells. At first, the MWDS PRP Group proposed letting the vinyl chloride migrate into the Saginaw Aquifer where they argued that it would be captured by the Saginaw extraction wells, SEW-3, SEW-4, and SEW-5, in compliance with the terms of the 2001 ESD and amended Consent Decree. The ability of the Saginaw Extraction Wells to capture

contamination from all potential points of entry south of Zone 2, however, remains uncertain, and U.S. EPA, MDEQ, and the BWL notified the MWDS PRP Group that letting additional vinyl chloride enter the Saginaw is not an appropriate way to protect the City of Lansing's water supply. The MWDS PRP Group has responded to the U.S. EPA, MDEQ, and BWL recommendation that they develop a strategy for protecting the Saginaw Aquifer that either includes additional extraction wells in the glacial aquifer or provides an equivalent level of protection. The Agencies anticipate a proposal for review within ninety days of the signing of this FYR.

In Zone 3, pumping related to the extraction and treatment system has significantly decreased the saturated thickness of the glacial aquifer. Because of this, water levels in the extraction wells make target flow rates unattainable. The MWDS PRP Group proposed a temporary (9 month) shut down the Zone 3 extraction wells, which was approved on February 20, 2007. Pumping from the Zone 3 wells was suspended on March 6, 2007.

Groundwater monitoring data from the Saginaw Extraction Wells (SEW-1, 2, 3, 4, and 5) indicates that the extent of contaminant capture continues to expand with the installation of new extraction wells. SEW-5 was added in 2006, and the preliminary results are encouraging. Nevertheless, the adequacy of Saginaw Extraction Wells to control the expansion of contamination and remove vinyl chloride and ammonia is still being studied.

**Site Inspection** - The RPM inspected the Site on November 13-15, 2006, and was accompanied by the MDEQ Project Manager and Site Geologist, the Remediation Specialists from Goodyear, and Goodyear's consultants in charge of the Site. The group reviewed the Site's history and examined the landfill cap and adjacent areas, the groundwater extraction and treatment system, and the infrastructure and outfalls to the Grand River. The review team confirmed that the installations were functioning as designed and that the cover and fencing were intact. A copy of the Site Inspection Checklist is included as Attachment 3.

#### **Review Team**

- Representing U.S. EPA Region 5
  - William J. Ryan, Remedial Project Manager
- Representing MDEQ
  - Robert L. Franks, Site Project Manager
  - Charles W. Graff, Geologist, Geological Support Unit
- Representing Goodyear
  - Todd Struttman, Los Alamos Technical Associates, Inc.
  - Shannon Lloyd, Los Alamos Technical Associates, Inc.
  - Marty Trembly, The Goodyear Tire & Rubber Company
  - Mark Whitmore, The Goodyear Tire & Rubber Company

**Site Security** - Site fencing is in good condition. Security appears adequate for conditions.

**Landfill Surface** - The landfill cover showed no signs of: (1) significant differential settlement; (2) cracks; (3) erosion; or (4) holes. The cover was vegetated, with well-maintained rip-rap in the drainage swales. There was no evidence of water damage, bulges, or slope instability inside the fenced area. Nevertheless, outside the fenced area of the cap there is evidence that the slope is being used by off-road recreational vehicles, and erosion that could potentially affect the cap is occurring.

**Main Site Control Building** - The treatment facility was inspected and found to be in good condition. The Supervisory Control and Data Acquisition (SCADA) system was demonstrated by the operating engineer and found to be fully functional.

**Monitoring Wells** - The groundwater monitoring wells inspected were determined to be in good order.

**Overall Observations** - The review team concluded that, overall, the waste disposal area and groundwater extraction and treatment infrastructure is well-maintained and functional, and that monitoring and reporting are satisfactory. The MWDS PRP Group and its consultants continue to optimize the extraction and treatment system, including monitoring and reporting, with input and approval from U.S. EPA and MDEQ.

While the cap and waste disposal area appear intact and properly maintained, the area to the north of the waste disposal area, where MSV Associates most recently conducted their gravel mining operations, has been degraded by trespassers using the slopes of the pit for the operation of off road vehicles. This has caused erosion that may at some point affect the integrity of the landfill cap. The MWDS PRP Group, U.S. EPA, and MDEQ are studying options for limiting access and preserving the integrity of the landfill cap.

**Interviews/Public Meeting** - Interviews with individuals beyond the Five-Year Review project team and treatment plant operator were not conducted. Subsequent to the newspaper notice, no member of the community or any other individual voiced an interest in conducting an interview related to the Five-Year Review.

## **VII. TECHNICAL ASSESSMENT**

### **Question A: Is the remedy functioning as intended by the decision documents?**

**YES** - The review of documents, ARARs, risk assumptions, and the results of the site inspection indicates that the remedy is functioning as intended by the ROD, as modified by the ESD. The stabilization and capping of the waste disposal area has achieved the remedial objectives: 1) to minimize the migration of contaminants to groundwater and surface water, and 2) prevent direct contact with, or ingestion of, contaminants in soil and sediments. The groundwater extraction and treatment system has, as of March 2007, treated over three billion gallons of contaminated water and removed approximately 540 pounds of vinyl chloride and 416,000 pounds of ammonia.

Opportunities for system optimization were not investigated during this review. The monitoring well network provides sufficient data to assess the progress of contaminant reduction within the plume, but questions regarding the extent and completeness of capture are still being examined.

The Institutional Controls required by the Consent Decree include prohibitions on the use or disturbance of groundwater, prohibitions on excavation activities, disturbance of the cap, and any other activities or actions that might interfere with the remedy. Nevertheless, activities were observed around the periphery of the waste disposal area that could eventually affect the integrity of the cap, and it remains necessary to verify that the Institutional Controls are in place and effective. The fence around the waste disposal area is intact, and no new uses of local groundwater were observed.

**Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy selection still valid?**

**YES** - The exposure assumptions used to develop the Human Health Risk Assessment included both current exposures and potential future exposures. There have been no changes in the toxicity factors for the contaminants of concern that were used in the baseline risk assessment. These assumptions are considered to be conservative and reasonable in evaluating risk and developing risk-based cleanup levels. No changes to these assumptions or the cleanup levels developed from them are warranted. There has been no change to the standardized risk assessment methodology that could affect the protectiveness of the remedy.

**Question C: Has any other information come to light that could call into question the protectiveness of the remedy?**

**YES** - The vinyl chloride in the glacial aquifer has recently been raised as an issue with the MWDS PRP Group, because a significant mass is present downgradient of the Zone 2 extraction wells. This mass of vinyl chloride is certainly beyond the influence of the Zone 2 extraction wells, and is also too far upgradient of Zone 3 to be captured by these extraction wells. Initially, the MWDS PRP Group proposed letting the vinyl chloride migrate into the Saginaw Aquifer where they contended that it would be captured by the Saginaw extraction wells, SEW-3, SEW-4, and SEW-5, in compliance with the terms of the 2001 ESD and amended Consent Decree. The ability of the Saginaw Extraction Wells to capture contamination from all potential points of entry south of Zone 2, however, remains uncertain, and U.S. EPA, MDEQ, and the BWL notified the MWDS PRP Group that letting additional vinyl chloride enter the Saginaw Aquifer is not an appropriate way to protect the City of Lansing's water supply, nor does it comply with the 1994 Consent Decree, which requires the attainment of contaminant cleanup standards in the glacial aquifer. The MWDS PRP Group has since responded to the U.S. EPA, MDEQ, and BWL recommendation that they develop a strategy for protecting the Saginaw Aquifer that either includes additional extraction wells in the glacial aquifer, or provides an equivalent level of protection. The Agencies anticipate a proposal for review within ninety days of the signing of this FYR.

## **Technical Assessment Summary**

According to the data reviewed, the site inspection, and the interviews, the remedy is functioning as intended by the ROD, as modified by the ESD. There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy. ARARs cited in the ROD have been met. There have been no changes in the toxicity factors for the contaminants of concern that were used in the baseline risk assessment, and there have been no changes to the standardized risk assessment methodology that could affect the protectiveness of the remedy. There is no other information that calls into question the current protectiveness of the remedy.

## **VII. ISSUES**

**Table 6 - Issues**

<b>Issue</b>	<b>Currently Affects Protectiveness (Y/N)</b>	<b>Affects Future Protectiveness (Y/N)</b>
<b>Institutional Controls</b> - Use restrictions have been filed with the county, however their implementation and effectiveness are uncertain and need review.	N	Y
<b>Institutional Controls/Long-term stewardship</b> - Long-term stewardship must be ensured by maintaining and monitoring ICs' effectiveness.	N	Y
<b>Contaminant Capture</b> - Some uncertainty remains regarding the extent of contaminant capture.	N	Y
<b>Vinyl Chloride</b> - There is approximately 100 pounds of vinyl chloride in the glacial aquifer that is beyond the influence of the Zone II wells. Some areas have concentrations above 100 ppb, and vinyl chloride could potentially migrate into the Saginaw Aquifer.	N	Y
<b>Hydraulic zone of capture for SEW-5</b> - The zone of influence for SEW-5 has yet to be determined.	N	Y
<b>Performance criteria for extraction wells</b> - The performance of extraction wells periodically deteriorates beyond the point at which they would benefit from a work-over.	N	Y
<b>MW-87</b> - The lower two hydraulic zones monitored by MW-87 were rendered inaccessible when the drop-pipe supporting the packer system corroded and fell to the bottom of the well.	N	Y

## IX. RECOMMENDATIONS and FOLLOW-UP ACTIONS

**Table 7 - Recommendations and Follow-Up Actions**

Issue	Recommendations/ Follow-up Actions	Party Responsible	Oversight Agency	Milestone Date	Affects Protectiveness? (Y/N)	
					Current	Future
<b>Institutional Controls' effectiveness</b>	An IC study will be conducted within six months of the date of this Five-Year Review Report.	PRPs	U.S. EPA/ MDEQ	12/22/07	N	Y
<b>Institutional Controls' Long-term stewardship</b>	An IC Plan will be developed for long-term stewardship	U.S. EPA/ MDEQ	U.S. EPA/ MDEQ	01/22/08	N	Y
<b>Contaminant Capture</b>	Continue monitoring the ammonia and VOC plumes until capture can be demonstrated.	PRPs	U.S. EPA/ MDEQ	In Progress	N	Y
<b>Vinyl Chloride</b>	Develop a strategy for protecting the Saginaw Aquifer that either includes additional extraction wells in the glacial aquifer or provides an equivalent level of protection.	PRPs	U.S. EPA/ MDEQ	Proposal submitted for Agencies' review within 90 days of FYR signature	N	Y
<b>Hydraulic zone of influence for SEW-5</b>	Collect and provide U.S. EPA/MDEQ with the appropriate hydraulic data necessary to determine the extent to which SEW-5 can reliably provide contaminant capture	PRPs	U.S. EPA/ MDEQ	In Progress	N	Y
<b>Performance criteria for extraction wells</b>	Develop performance criteria for extraction wells that can be used to determine when restoration procedures should be implemented	PRPs	U.S. EPA/ MDEQ	Under Review	N	Y

**Table 7 - Recommendations and Follow-Up Actions**

<b>MW-87</b>	Return MW-87 to a condition that allows installation of the FLUTe multi-port sampling system (made specifically for this well) or replace with a new monitoring well that allows sampling of all three hydraulic zones.	PRPs	U.S. EPA/ MDEQ	In Progress	N	Y
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**X. PROTECTIVENESS STATEMENT**

The remedy is currently protective of human health and the environment in the short-term. The landfill cover and access controls are functioning as designed, and have achieved their remedial objectives, which include minimizing the migration of contaminants to groundwater and surface water, and preventing direct contact with contaminants at the Site. The groundwater extraction and treatment system continues to remove contaminants of concern, and there is currently no exposure to contaminated groundwater.

Long-term protectiveness of the remedy is dependent upon the continued effectiveness of the groundwater extraction and treatment system in maintaining hydraulic control of the plume and removing contaminants from the affected aquifers. Groundwater monitoring will continue until the completed performance of the remedy can be demonstrated by the attainment of remedial standards. Long term protectiveness is also dependent upon the implementation and maintenance of the institutional controls listed in the Consent Decree, which will be subject to an institutional controls study and plan within six months of the signing of this Five-Year Review.

**XI. NEXT REVIEW**

The next Five-Year Review for the Motor Wheel Superfund Site is required five years from the signature date of this review.

[illegible]

**ATTACHMENT 2**  
**MOTOR WHEEL "SUPERFUND" SITE**  
**DECLARATION OF RESTRICTIONS FOR THE MSV ASSOCIATES PROPERTY**

This Declaration of Restrictions ("Declaration") is made on the date set forth below by MSV Associates, a Michigan Co-Partnership ("Declarant").

WITNESSETH:

WHEREAS, the Declarant owns real property located in the City of Lansing, Ingham County, Michigan, more particularly described and depicted on attached Exhibit A hereto (the "Property").

WHEREAS, the Property is the subject of certain Remedial Action ("RA") and Operation and Maintenance ("O&M") activities that are to be implemented by the Motor Wheel Disposal Site Committee ("MWDSC") pursuant to and the under the authority of the Federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. § 9601 et seq., as amended ("CERCLA" or "Superfund"), and pursuant to and consistent with the Record of Decision ("ROD") for the Motor Wheel "Superfund" Site (the "Site") dated September 30, 1991. The Property is also subject to a Consent Decree entered into on April 26, 1994, in the United States District Court for the Western District of Michigan, Southern Division, between the United States of America as plaintiff and Motor Wheel Corporation, et al. as defendants, attached hereto as Exhibit B (the "Consent Decree").

WHEREAS, pursuant to the ROD and the Consent Decree, the Property is to be restricted as to use.

WHEREAS, the Declarant desires to impose upon the Property restrictions, conditions and covenants in order to ensure the Property's conformance with the ROD and the Consent Decree.

NOW, THEREFORE, for the sum of \$10.00 and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Declarant hereby declares that the Property shall be held, sold and conveyed, subject to the following restrictions, conditions and covenants, which shall run with the Property and shall be binding upon and inure to the benefit of all parties having any title or ownership interest in the Property, or any part thereof, their heirs, successors and assigns.

**ARTICLE I**  
**Non-Interference**

No person, party, entity or agent, employee or successor thereof may use or occupy the Property in a manner which would unreasonably interfere with the timely performance of the "Work" on the Property, as that term is defined in the Consent Decree, provided, however, that

advance notice of any and all Work to be performed on the Property shall be given to the owner and occupant(s) of the Property. There shall be good faith consultation with the Property owner and occupant(s) as to the specifics and logistics of any such Work on the Property. Any disputes as to the performance of Work on the Property shall be referred to the Lead Agency (as defined below) for initial resolution, and subject to the parties' further claims, rights and defenses.

## **ARTICLE II**

### **Use**

2.1 Residential or agricultural uses of the Property may only be undertaken with the prior written approval of an authorized employee of the United States Environmental Protection Agency ("U.S. EPA") or the Michigan Department of Environmental Quality ("MDEQ"), whichever is the lead agency at the time (hereinafter "the Lead Agency"), and such approval shall not be unreasonably withheld or delayed. For purposes of the foregoing (i) "residential" shall mean, without limitation, single-family or multi-family dwellings of any size, (ii) "agricultural" shall mean, without limitation, customary agricultural use including growing of crops, keeping of animals, nurseries, and greenhouses. Use of the property for industrial, commercial and other business purposes consistent with Article I shall require no prior approval.

2.2 There shall be no subsurface drilling including, without limitation, drilling for groundwater wells, on the Property except in locations and in the manner described in the ROD, without the prior written approval of an authorized employee of the Lead Agency, and such approval shall not be unreasonably withheld or delayed.

## **ARTICLE III**

### **Amendment/Enforcement**

3.1 The provisions hereof shall run with and bind the Property in perpetuity and may not be modified or amended except by a written modification or amendment recorded with the Register of Deeds for Ingham County, Michigan, by both the Declarant or its successors or assigns and an authorized agent of the Lead Agency.

3.2 If Declarant believes that any or all of the obligations hereunder are no longer necessary to ensure protection of health and the environment, Declarant may request in writing that the Lead Agency agree to terminate the provisions establishing such obligations as to some or all of the Property, and such agreement shall not be unreasonably withheld or delayed; provided, however, that the provisions in question shall continue in force unless and until the Lead Agency provides written agreement to terminate such provisions, or upon a ruling by a court of competent jurisdiction.

3.3 In addition to any remedy provided for under CERCLA or the Consent Decree, the Declarant and its successors and assigns shall have the right at any time or times during the term of this Declaration to proceed at law or in equity against any person, party, entity or agent,

employee or successor thereof violating or attempting to violate any provision contained herein, to prevent or abate such violations, to compel compliance with the terms hereof and to recover damages or other compensation for any violation. The failure to enforce any provision contained herein in any particular instance shall not be deemed a waiver of the right to do so as to any continuing, subsequent or other violation.

#### **ARTICLE IV**

##### **Miscellaneous**

4.1 The invalidity or unenforceability of any provision hereof shall not affect the validity or enforceability of any other provision hereof.

4.2 This Declaration shall be governed by and construed with the laws of the State of Michigan as the same may apply to contracts executed in and to be performed fully within the State of Michigan.

4.3 The obligations of the Declarant hereunder are undertaken only insofar as the MWDSC and the Lead Agency fulfill their obligations hereunder.

### Attachment 3 Site Inspection Checklist

I. SITE INFORMATION			
<b>Site name:</b> Motor Wheel Disposal Site		<b>Date of inspection:</b> 11/13/06 – 11/15/06	
<b>Location and Region:</b> Lansing, MI / Region 5		<b>EPA ID:</b> MID980702989	
<b>Agency, office, or company leading the Five-Year Review:</b> U.S. EPA		<b>Weather/temperature:</b> Seasonable	
<b>Remedy Includes:</b> (Check all that apply) <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div style="width: 48%;"> <input checked="" type="checkbox"/> Landfill cover/containment  <input checked="" type="checkbox"/> Access controls  <input type="checkbox"/> Institutional controls  <input checked="" type="checkbox"/> Groundwater pump and treatment  <input type="checkbox"/> Surface water collection and treatment  <input type="checkbox"/> Other _____             </div> <div style="width: 48%;"> <input type="checkbox"/> Monitored natural attenuation  <input type="checkbox"/> Groundwater containment  <input type="checkbox"/> Vertical barrier walls             </div> </div>			
<b>Attachments:</b> <input type="checkbox"/> Inspection team roster attached <input type="checkbox"/> Site map attached			
II. INTERVIEWS (Check all that apply)			
1. O&M site manager	<u>Shannon Lloyd</u> <div style="text-align: center;">Name</div>	<u>Site Manager</u> <div style="text-align: center;">Title</div>	<u>11/14/06</u> <div style="text-align: center;">Date</div>
Interviewed <input checked="" type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone   Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached _____ _____			
2. O&M staff _____	_____ <div style="text-align: center;">Name</div>	_____ <div style="text-align: center;">Title</div>	_____ <div style="text-align: center;">Date</div>
Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone   Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached _____ _____			

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency \_\_\_\_\_  
 Contact \_\_\_\_\_  
 Title \_\_\_\_\_ Date \_\_\_\_\_ Phone no. \_\_\_\_\_  
 Problems; suggestions; ☐ Report attached \_\_\_\_\_

Agency \_\_\_\_\_  
 Contact \_\_\_\_\_  
 Title \_\_\_\_\_ Date \_\_\_\_\_ Phone no. \_\_\_\_\_  
 Problems; suggestions; ☐ Report attached \_\_\_\_\_

Agency \_\_\_\_\_  
 Contact \_\_\_\_\_  
 Title \_\_\_\_\_ Date \_\_\_\_\_ Phone no. \_\_\_\_\_  
 Problems; suggestions; ☐ Report attached \_\_\_\_\_

Agency \_\_\_\_\_  
 Contact \_\_\_\_\_  
 Title \_\_\_\_\_ Date \_\_\_\_\_ Phone no. \_\_\_\_\_  
 Problems; suggestions; ☐ Report attached \_\_\_\_\_

4. **Other interviews** (optional) ☐ Report attached.

### III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

- |    |  |  |                                     |                              |
|----|--|--|-------------------------------------|------------------------------|
| 1. | <b>O&amp;M Documents</b>                   | <input type="checkbox"/> Readily available | <input type="checkbox"/> Up to date | <input type="checkbox"/> N/A |
|    | <input type="checkbox"/> O&M manual        | <input type="checkbox"/> Readily available | <input type="checkbox"/> Up to date | <input type="checkbox"/> N/A |
|    | <input type="checkbox"/> As-built drawings | <input type="checkbox"/> Readily available | <input type="checkbox"/> Up to date | <input type="checkbox"/> N/A |
|    | <input type="checkbox"/> Maintenance logs  | <input type="checkbox"/> Readily available | <input type="checkbox"/> Up to date | <input type="checkbox"/> N/A |
|    | Remarks _____                              |  |                                     |                              |
- 
- |    |   |  |                                     |                              |
|----|---|--|-------------------------------------|------------------------------|
| 2. | <b>Site-Specific Health and Safety Plan</b>                       | <input type="checkbox"/> Readily available | <input type="checkbox"/> Up to date | <input type="checkbox"/> N/A |
|    | <input type="checkbox"/> Contingency plan/emergency response plan | <input type="checkbox"/> Readily available | <input type="checkbox"/> Up to date | <input type="checkbox"/> N/A |
|    | Remarks _____   |  |                                     |                              |
- 
- |    |  |  |                                     |   |
|----|--|--|-------------------------------------|---|
| 3. | <b>O&amp;M and OSHA Training Records</b> | <input type="checkbox"/> Readily available | <input type="checkbox"/> Up to date | <input checked="" type="checkbox"/> N/A |
|    | Remarks _____                            |  |                                     |   |

4.	<b>Permits and Service Agreements</b> <input type="checkbox"/> Air discharge permit <input checked="" type="checkbox"/> Effluent discharge <input type="checkbox"/> Waste disposal, POTW <input type="checkbox"/> Other permits _____ Remarks _____	<input type="checkbox"/> Readily available <input checked="" type="checkbox"/> Readily available <input type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input checked="" type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A
5.	<b>Gas Generation Records</b> Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
6.	<b>Settlement Monument Records</b> Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
7.	<b>Groundwater Monitoring Records</b> Remarks _____	<input checked="" type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
8.	<b>Leachate Extraction Records</b> Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
9.	<b>Discharge Compliance Records</b> <input type="checkbox"/> Air <input type="checkbox"/> Water (effluent) Remarks _____	<input type="checkbox"/> Readily available <input checked="" type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input checked="" type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> N/A
10.	<b>Daily Access/Security Logs</b> Remarks _____	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A
<b>IV. O&amp;M COSTS</b>				
1.	<b>O&amp;M Organization</b> <input type="checkbox"/> State in-house <input type="checkbox"/> PRP in-house <input type="checkbox"/> Federal Facility in-house <input type="checkbox"/> Other _____	<input type="checkbox"/> Contractor for State <input checked="" type="checkbox"/> Contractor for PRP <input type="checkbox"/> Contractor for Federal Facility		

2.	<b>O&amp;M Cost Records</b> <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> Funding mechanism/agreement in place Original O&M cost estimate _____ <input type="checkbox"/> Breakdown attached  <div style="text-align: center;">Total annual cost by year for review period if available</div> <table style="width: 100%; border: none;"> <tr> <td style="width: 20%;">From _____</td> <td style="width: 20%;">To _____</td> <td style="width: 20%;"></td> <td style="width: 20%;"></td> <td style="width: 20%;"></td> <td style="width: 20%;"></td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td colspan="3"><input type="checkbox"/> Breakdown attached</td> </tr> </table> <table style="width: 100%; border: none;"> <tr> <td style="width: 20%;">From _____</td> <td style="width: 20%;">To _____</td> <td style="width: 20%;"></td> <td style="width: 20%;"></td> <td style="width: 20%;"></td> <td style="width: 20%;"></td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td colspan="3"><input type="checkbox"/> Breakdown attached</td> </tr> </table> <table style="width: 100%; border: none;"> <tr> <td style="width: 20%;">From _____</td> <td style="width: 20%;">To _____</td> <td style="width: 20%;"></td> <td style="width: 20%;"></td> <td style="width: 20%;"></td> <td style="width: 20%;"></td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td colspan="3"><input type="checkbox"/> Breakdown attached</td> </tr> </table> <table style="width: 100%; border: none;"> <tr> <td style="width: 20%;">From _____</td> <td style="width: 20%;">To _____</td> <td style="width: 20%;"></td> <td style="width: 20%;"></td> <td style="width: 20%;"></td> <td style="width: 20%;"></td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td colspan="3"><input type="checkbox"/> Breakdown attached</td> </tr> </table> <table style="width: 100%; border: none;"> <tr> <td style="width: 20%;">From _____</td> <td style="width: 20%;">To _____</td> <td style="width: 20%;"></td> <td style="width: 20%;"></td> <td style="width: 20%;"></td> <td style="width: 20%;"></td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td colspan="3"><input type="checkbox"/> Breakdown attached</td> </tr> </table>	From _____	To _____					Date	Date	Total cost	<input type="checkbox"/> Breakdown attached			From _____	To _____					Date	Date	Total cost	<input type="checkbox"/> Breakdown attached			From _____	To _____					Date	Date	Total cost	<input type="checkbox"/> Breakdown attached			From _____	To _____					Date	Date	Total cost	<input type="checkbox"/> Breakdown attached			From _____	To _____					Date	Date	Total cost	<input type="checkbox"/> Breakdown attached		
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3.	<b>Unanticipated or Unusually High O&amp;M Costs During Review Period</b> Describe costs and reasons: _____ _____ _____ _____ _____																																																												
<b>V. ACCESS AND INSTITUTIONAL CONTROLS</b> <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A																																																													
<b>A. Fencing</b>																																																													
1.	<b>Fencing damaged</b> <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Gates secured <input type="checkbox"/> N/A Remarks _____ _____																																																												
<b>B. Other Access Restrictions</b>																																																													
1.	<b>Signs and other security measures</b> <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> N/A Remarks _____ _____																																																												
<b>C. Institutional Controls (ICs)</b>																																																													

1.	<b>Implementation and enforcement</b>	
	Site conditions imply ICs not properly implemented	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
	Site conditions imply ICs not being fully enforced	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
	Type of monitoring (e.g., self-reporting, drive by) _____	
	Frequency _____	
	Responsible party/agency _____	
	Contact _____	
	Name	Title
	Date	Phone no.
	Reporting is up-to-date	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
	Reports are verified by the lead agency	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
	Specific requirements in deed or decision documents have been met	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
	Violations have been reported	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
	Other problems or suggestions: <input type="checkbox"/> Report attached	
	Remarks: <i>IC Study/Plan to be conducted/developed after Five-Year Review is completed.</i>	
2.	<b>Adequacy</b>	<input type="checkbox"/> ICs are adequate <input type="checkbox"/> ICs are inadequate <input type="checkbox"/> N/A
	Remarks: <i>Unknown until IC Study/Plan conducted/developed</i>	
<b>D. General</b>		
1.	<b>Vandalism/trespassing</b>	<input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> No vandalism evident
	Remarks: _____	
2.	<b>Land use changes on site</b>	<input checked="" type="checkbox"/> N/A
	Remarks: _____	
3.	<b>Land use changes off site</b>	<input checked="" type="checkbox"/> N/A
	Remarks: _____	
<b>VI. GENERAL SITE CONDITIONS</b>		
	<b>A. Roads</b>	<input type="checkbox"/> Applicable <input type="checkbox"/> N/A
1.	<b>Roads damaged</b>	<input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Roads adequate <input type="checkbox"/> N/A
	Remarks: _____	
<b>B. Other Site Conditions</b>		
	Remarks: <i>Physical conditions at the site are adequate.</i>	
<b>VII. LANDFILL COVERS</b> <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A		

<b>A. Landfill Surface</b>			
1.	<b>Settlement</b> (Low spots) Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map Depth _____	<input checked="" type="checkbox"/> Settlement not evident
2.	<b>Cracks</b> Lengths _____ Widths _____ Depths _____ Remarks _____	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> Cracking not evident
3.	<b>Erosion</b> Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map Depth _____	<input checked="" type="checkbox"/> Erosion not evident
4.	<b>Holes</b> Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map Depth _____	<input checked="" type="checkbox"/> Holes not evident
5.	<b>Vegetative Cover</b> <input type="checkbox"/> Grass <input type="checkbox"/> Cover properly established <input checked="" type="checkbox"/> No signs of stress <input type="checkbox"/> Trees/Shrubs (indicate size and locations on a diagram) Remarks _____		
6.	<b>Alternative Cover (armored rock, concrete, etc.)</b> <input checked="" type="checkbox"/> N/A Remarks _____		
7.	<b>Bulges</b> Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map Height _____	<input checked="" type="checkbox"/> Bulges not evident
8.	<b>Wet Areas/Water Damage</b> <input checked="" type="checkbox"/> Wet areas/water damage not evident <input type="checkbox"/> Wet areas <input type="checkbox"/> Location shown on site map      Areal extent _____ <input type="checkbox"/> Ponding <input type="checkbox"/> Location shown on site map      Areal extent _____ <input type="checkbox"/> Seeps <input type="checkbox"/> Location shown on site map      Areal extent _____ <input type="checkbox"/> Soft subgrade <input type="checkbox"/> Location shown on site map      Areal extent _____ Remarks _____		
9.	<b>Slope Instability</b> <input type="checkbox"/> Slides <input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of slope instability Areal extent _____ Remarks: <i>There is evidence that off-road vehicles are using the slopes outside the fenced area, but there is currently no sign that this has affected the cap. U.S. EPA and PRPs are investigating.</i>		
<b>B. Benches</b> <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A (Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)			

1.	<b>Flows Bypass Bench</b> Remarks _____	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A or okay
2.	<b>Bench Breached</b> Remarks _____	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> N/A or okay
3.	<b>Bench Overtopped</b> Remarks _____	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> N/A or okay
<b>C. Letdown Channels</b> <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A (Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)			
1.	<b>Settlement</b> Areal extent _____      Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> No evidence of settlement
2.	<b>Material Degradation</b> Material type _____      Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> No evidence of degradation
3.	<b>Erosion</b> Areal extent _____      Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> No evidence of erosion
4.	<b>Undercutting</b> Areal extent _____      Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> No evidence of undercutting
5.	<b>Obstructions</b> Type _____ <input type="checkbox"/> Location shown on site map      Areal extent _____ Size _____ Remarks _____		<input checked="" type="checkbox"/> No obstructions
6.	<b>Excessive Vegetative Growth</b> Type _____ <input type="checkbox"/> No evidence of excessive growth <input checked="" type="checkbox"/> Vegetation in channels does not obstruct flow <input type="checkbox"/> Location shown on site map      Areal extent _____ Remarks _____		
<b>D. Cover Penetrations</b> <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A			

1.	<b>Gas Vents</b> <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Evidence of leakage at penetration <input checked="" type="checkbox"/> N/A Remarks _____	<input type="checkbox"/> Active <input type="checkbox"/> Functioning  	<input type="checkbox"/> Passive <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Needs Maintenance  	<input type="checkbox"/> Good condition  
2.	<b>Gas Monitoring Probes</b> <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Evidence of leakage at penetration Remarks _____	<input type="checkbox"/> Functioning  	<input type="checkbox"/> Routinely sampled <input type="checkbox"/> Needs Maintenance  	<input type="checkbox"/> Good condition <input checked="" type="checkbox"/> N/A  
3.	<b>Monitoring Wells</b> (within surface area of landfill) <input checked="" type="checkbox"/> Properly secured/locked <input type="checkbox"/> Evidence of leakage at penetration Remarks _____	<input checked="" type="checkbox"/> Functioning  	<input checked="" type="checkbox"/> Routinely sampled <input type="checkbox"/> Needs Maintenance  	<input checked="" type="checkbox"/> Good condition <input type="checkbox"/> N/A  
4.	<b>Leachate Extraction Wells</b> <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Evidence of leakage at penetration Remarks _____	<input type="checkbox"/> Functioning  	<input type="checkbox"/> Routinely sampled <input type="checkbox"/> Needs Maintenance  	<input type="checkbox"/> Good condition <input checked="" type="checkbox"/> N/A  
5.	<b>Settlement Monuments</b> Remarks _____	<input type="checkbox"/> Located  	<input type="checkbox"/> Routinely surveyed  	<input checked="" type="checkbox"/> N/A  
<b>E. Gas Collection and Treatment</b> <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A				
1.	<b>Gas Treatment Facilities</b> <input type="checkbox"/> Flaring <input type="checkbox"/> Good condition Remarks _____	<input type="checkbox"/> Thermal destruction <input type="checkbox"/> Needs Maintenance  	<input type="checkbox"/> Collection for reuse  	
2.	<b>Gas Collection Wells, Manifolds and Piping</b> <input type="checkbox"/> Good condition Remarks _____	<input type="checkbox"/> Needs Maintenance  		
3.	<b>Gas Monitoring Facilities</b> (e.g., gas monitoring of adjacent homes or buildings) <input type="checkbox"/> Good condition Remarks _____	<input type="checkbox"/> Needs Maintenance  	<input type="checkbox"/> N/A  	
<b>F. Cover Drainage Layer</b> <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A				
1.	<b>Outlet Pipes Inspected</b> Remarks _____	<input type="checkbox"/> Functioning  	<input type="checkbox"/> N/A  	

2.	<b>Outlet Rock Inspected</b>	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A
Remarks _____			
<b>G. Detention/Sedimentation Ponds</b> <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
1.	<b>Siltation</b> Areal extent _____ Depth _____	<input type="checkbox"/> N/A	
<input type="checkbox"/> Siltation not evident			
Remarks _____			
2.	<b>Erosion</b> Areal extent _____ Depth _____		
<input type="checkbox"/> Erosion not evident			
Remarks _____			
3.	<b>Outlet Works</b>	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A
Remarks _____			
4.	<b>Dam</b>	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A
Remarks _____			
<b>H. Retaining Walls</b> <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
1.	<b>Deformations</b>	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Deformation not evident
Horizontal displacement _____		Vertical displacement _____	
Rotational displacement _____			
Remarks _____			
2.	<b>Degradation</b>	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Degradation not evident
Remarks _____			
<b>I. Perimeter Ditches/Off-Site Discharge</b> <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A			
1.	<b>Siltation</b>	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Siltation not evident
Areal extent _____		Depth _____	
Remarks _____			
2.	<b>Vegetative Growth</b>	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A
<input type="checkbox"/> Vegetation does not impede flow			
Areal extent _____		Type _____	
Remarks _____			
3.	<b>Erosion</b>	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Erosion not evident
Areal extent _____		Depth _____	
Remarks _____			

4.	<b>Discharge Structure</b>	<input checked="" type="checkbox"/> Functioning	<input type="checkbox"/> N/A	Remarks _____
<b>VIII. VERTICAL BARRIER WALLS</b> <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A				
1.	<b>Settlement</b>	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Settlement not evident	Areal extent _____ Depth _____ Remarks _____
2.	<b>Performance Monitoring</b>	Type of monitoring _____ <input type="checkbox"/> Performance not monitored Frequency _____ <input type="checkbox"/> Evidence of breaching Head differential _____ Remarks _____		
<b>IX. GROUNDWATER/SURFACE WATER REMEDIES</b> <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A				
<b>A. Groundwater Extraction Wells, Pumps, and Pipelines</b>		<input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A		
1.	<b>Pumps, Wellhead Plumbing, and Electrical</b> <input checked="" type="checkbox"/> Good condition <input checked="" type="checkbox"/> All required wells properly operating <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____			
2.	<b>Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances</b> <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____			
3.	<b>Spare Parts and Equipment</b> <input checked="" type="checkbox"/> Readily available <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Requires upgrade <input type="checkbox"/> Needs to be provided Remarks _____			
<b>B. Surface Water Collection Structures, Pumps, and Pipelines</b>		<input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
1.	<b>Collection Structures, Pumps, and Electrical</b> <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____			
2.	<b>Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances</b> <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____			
3.	<b>Spare Parts and Equipment</b> <input type="checkbox"/> Readily available <input type="checkbox"/> Good condition <input type="checkbox"/> Requires upgrade <input type="checkbox"/> Needs to be provided Remarks _____			

<b>C. Treatment System</b>		<input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A
1.	<b>Treatment Train</b> (Check components that apply) <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div> <input type="checkbox"/> Metals removal  <input checked="" type="checkbox"/> Air stripping  <input type="checkbox"/> Filters  <input type="checkbox"/> Additive (e.g., chelation agent, flocculent)  <input type="checkbox"/> Others         </div> <div> <input type="checkbox"/> Oil/water separation  <input type="checkbox"/> Carbon adsorbers  <input type="checkbox"/> Needs Maintenance         </div> <div> <input type="checkbox"/> Bioremediation         </div> </div> <div style="margin-top: 5px;"> <input checked="" type="checkbox"/> Good condition  <input checked="" type="checkbox"/> Sampling ports properly marked and functional  <input checked="" type="checkbox"/> Sampling/maintenance log displayed and up to date  <input checked="" type="checkbox"/> Equipment properly identified  <input checked="" type="checkbox"/> Quantity of groundwater treated annually _____  <input type="checkbox"/> Quantity of surface water treated annually _____            Remarks _____         </div>	
2.	<b>Electrical Enclosures and Panels</b> (properly rated and functional) <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____	
3.	<b>Tanks, Vaults, Storage Vessels</b> <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Proper secondary containment <input type="checkbox"/> Needs Maintenance Remarks _____	
4.	<b>Discharge Structure and Appurtenances</b> <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____	
5.	<b>Treatment Building(s)</b> <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good condition (esp. roof and doorways) <input type="checkbox"/> Needs repair <input type="checkbox"/> Chemicals and equipment properly stored Remarks _____	
6.	<b>Monitoring Wells</b> (pump and treatment remedy) <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div> <input checked="" type="checkbox"/> Properly secured/locked  <input checked="" type="checkbox"/> All required wells located         </div> <div> <input checked="" type="checkbox"/> Functioning  <input type="checkbox"/> Needs Maintenance         </div> <div> <input checked="" type="checkbox"/> Routinely sampled  <input type="checkbox"/> N/A         </div> <div> <input checked="" type="checkbox"/> Good condition         </div> </div> Remarks _____	
<b>D. Monitoring Data</b>		
X.	<b>Monitoring Data</b> <input checked="" type="checkbox"/> Is routinely submitted on time <input checked="" type="checkbox"/> Is of acceptable quality	
XI.	<b>Monitoring data suggests:</b> <input type="checkbox"/> Groundwater plume is effectively contained <input checked="" type="checkbox"/> Contaminant concentrations are declining	

<b>D. Monitored Natural Attenuation</b>			
1.	<b>Monitoring Wells</b> (natural attenuation remedy) <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> All required wells located <input type="checkbox"/> Needs Maintenance <input checked="" type="checkbox"/> N/A Remarks _____ _____		
<b>X. OTHER REMEDIES</b>			
If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction. <input checked="" type="checkbox"/> N/A			
<b>XI. OVERALL OBSERVATIONS</b>			
<b>A. Implementation of the Remedy</b>			
Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).  <i>The review team concluded that, overall, the waste disposal area and groundwater extraction and treatment infrastructure is well-maintained and functional, and that monitoring and reporting are satisfactory. The MWDS PRP Group and its consultants continue to optimize the extraction and treatment system, including monitoring and reporting, with input and approval from U.S. EPA and MDEQ.</i>			
<b>B. Adequacy of O&amp;M</b>			
Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.  <i>O&amp;M is adequate.</i>			
<b>C. Early Indicators of Potential Remedy Problems</b>			
Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs that suggest that the protectiveness of the remedy may be compromised in the future. _____ _____			
<b>D. Opportunities for Optimization</b>			
Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. <i>Opportunities for optimization were not discussed as part of this FYR.</i>			

## **Attachment 4 Public Notice Advertisement**



# **EPA Starts Review of Motor Wheel Superfund Site Lansing, Michigan**

U.S. Environmental Protection Agency, with assistance from Michigan Department of Environmental Quality, will start a Five-Year Review of the cleanup at the 24-acre Motor Wheel Superfund site. The site is located on the northeast edge of the city of Lansing, Lansing Township, Ingham County, Mich. This review will check the site operations and maintenance plan for monitoring ground-water quality and overall effectiveness of the cleanup. The last 5 year review (July 2002) indicated the immediate threats associated with the waste disposal area have been addressed. Significant improvements to the groundwater extraction system have reduced concerns regarding the effectiveness of plume capture, but careful monitoring is still necessary to ensure that drinking water resources remain unaffected.

This review is required to ensure the selected cleanup plan continues to protect human health and the environment. This review has a July 22, 2007 completion date.

Site information can be found in the information repository located at:

Lansing Public Library  
401 S. Capital Ave.

Public comment is encouraged. The public can direct any site-related questions, comments or requests for additional information to either EPA team member listed below:

**William Ryan**  
Remedial Project Manager  
EPA Region 5 (SR-6J)  
77 W. Jackson Blvd.  
Chicago, IL 60604  
(312) 353-4374  
ryan.williamj@epa.gov

**Robert Paulson**  
Community Involvement Coordinator  
EPA Region 5 (P-19J)  
77 W. Jackson Blvd.  
Chicago, IL 60604  
(312) 886-0272  
paulson.robert@epa.gov

Toll free (800) 621-8431, 10 a.m. to 5:30 p.m. weekdays

# Attachment 5

## Aerial photograph showing the current extent of the Declaration of Restrictions

**Institutional Control (IC) Review**  
Implemented Institutional Controls

**Superfund**  
U.S. Environmental Protection Agency



**Motor Wheel**  
Ingham County, MI

**MID980702989**



### Legend

- Motor Wheel Site Boundary
- Deed Restrictions - Implemented IC

0 300 600 Feet



EPA Disclaimer: Please be advised that areas depicted in the map have been estimated. The map does not create any rights enforceable by any party. EPA may refine or change this data and map at any time.

Created by Sarah Backhouse  
U.S. EPA Region 5 on 12/18/06  
Image Date: 08/03

## **Attachment 6**

### **Documents Reviewed for the Five-Year Review**

- Enforcement documents
  - 1994 Consent Decree and Statement of Work
  - 2002 Amended Consent Decree and Amended Statement of Work
- Design documents (RI/FS Reports)
  - 1990 Hunter Keck, Inc. Remedial Investigation Report
  - 1991 CDM, Inc. Saginaw Aquifer Technical Evaluation Team Final Report
  - 1999 Science and Technology Management, Inc. Remedial Investigation Report
  - 2001 RD/RA Statement of Work
- Decision documents (ROD and ESD)
  - 1991 Record of Decision
  - 2001 Explanation of Significant Difference
- O&M records and quarterly monitoring data

## **Attachment 7**

### **Applicable or Relevant and Appropriate Requirements (ARARs)**

#### Action-Specific ARARs:

Clean Water Act (CWA) of 1977, as amended [33 U.S.C. 1251]

The National Pollutant Discharge Elimination System (NPDES) - 40 C.F.R 122 and 40 CFR 125 - which specifies the scope and details of the NPDES permit applications, including limitations, standards, and other permit conditions applicable to all permits including specified categories of NPDES permits. Also specifies schedules of compliance and requirements for recording and reporting monitoring results. Administered by MDNR under 1929 Michigan Public Act 245, as amended, Part 21.

Michigan Act 348 of the Public Acts of 1965, as amended: Air Pollution Act

- Part 2 - Air Use Approval, which specifies information required for a permit to install, construct, reconstruct, relocate, or alter any process, fuel burning or refuse burning equipment, or control equipment which may be a source of air contamination.
- Parts 3, 7 and 9 - Emissions, which specifies emission limitations for particulates, fugitive dust, VOCs, and or contaminants which may be injurious to or adversely affect human health or welfare, animal life, vegetation, or property, or interfere with normal use and enjoyment.
- Part 10 - Intermittent Testing and Sampling, requirements which may require performance of acceptable performance tests.

Resource Conservation and Recovery Act, Subtitle C (RCRA), 1976; U.S.C. 6901; 1979 Michigan Hazardous Waste Management Act, PA 64

Ground Water Protection Standards - 40 C.F.R. 264 - which provide technical requirements for long-term monitoring while the ground water treatment element is active and for at least the first five year review period following completion of the ground water cleanup.

#### Chemical-Specific ARARs:

Clean Water Act (CWA) of 1977, as amended [33 U.S.C. 1251]

Toxic Pollutant Effluent Standards - 40 CFR 129 – which establish toxic pollutant effluent standards and prohibitions of specific compounds for specified facilities discharging into navigable waters. 40 C.F.R 129.104 sets the ambient water criteria in navigable waters.

Public Health Service Act Title XIV, as amended by the Safe Drinking Water Act [42 U.S.C.

300] and 1979 Michigan Safe Drinking Water Act, Act 399

National Primary Drinking Water Regulations - 40 C.F.R. 141 - which specify maximum chemical contaminant levels (MCLs) of public water systems for inorganic and organic chemicals, maximum contaminant level goals (MCLGs) of public water systems for organic chemicals, and establishes national revised primary drinking water regulations of MCLs for organic chemicals. Public Act 399 incorporates the MCLs for a public drinking water supply system, which includes ground water used as a drinking water supply.

Clean Air Act of 1963, as amended [42 U.S.C. 7401]

National Primary and Secondary Ambient Air Quality Standards - 40 CFR 50 - which establish national primary and secondary ambient air quality standards. The appendices provide methods and procedures for measuring specific air pollutants.

National Emission Standards for Hazardous Air Pollutants - 40 CFR 61 - which identifies substances that have been designated hazardous air pollutants, and for which a Federal Register notice has been published, and specifies prohibited activities, describes procedures for determining whether construction or modification is involved, prescribes methods of applying for approval, and covers the manner in which start-up notification is to be provided.

Act 245 of the Public Acts of 1929, as amended: Water Resources Commission Act

Part 4, Rule 57 - Water Quality Standards (Surface Water Quality Standards), which establishes limits for all waters of the State for the following components: dissolved solids, pH, taste and odor producing substances, toxic substances, total phosphorous and other nutrients, and dissolved oxygen.

Rule 98 - Antidegradation, requires maintenance and protection of existing waters when water quality is better than water quality standards.

- Part 22 - The State has identified this rule as an ARAR. The State concurs with the remedy selected, and has stated that in applying Act 307 requirements to the groundwater treatment, the remedy selected will satisfy the requirements of Act 245. The United States disagrees that Act 245, as interpreted and applied by the State in this matter, is an ARAR. This issue is the subject of litigation in U.S. v. Akzo Coatings of America, appellate case numbers 89-2902 and 80-2137, and may be reassessed after a decision has been rendered.

Act 348 of the Public Acts of 1965, as amended: Air Pollution Act

- Part 3 - Emission Limitations and Prohibitions - Particulate Matter, which establishes standards for the density of emissions and emission of particulate matter.

Act 307, Michigan Environmental Response Act. The rules promulgated pursuant to the Act set

requirements for evaluating remediation of hazardous waste sites in Michigan. There are three types of remediation specified by this act; Type A, B, and C.

Act 347 of the Public Acts of 1972: Soil Erosion and Sedimentation Control Act

- Part 17 - Soil Erosion and Sedimentation Control - Establishes general soil erosion and sedimentation control procedures and measures. Also, specifies earth change requirements and soil conservation district standards and specifications.